CHAPTER 2
DESCRIPTION OF ALTERNATIVES

This chapter describes the three alternatives that DOE has analyzed in this Waste Management EIS: the No Action Alternative (Continuation of Ongoing Waste Management Activities), Alternative A (Offsite Shipment of HLW, LLW, Mixed LLW, and TRU Waste to Disposal and Ongoing Management of the Waste Storage Tanks), and Alternative B (Offsite Shipment of LLW and Mixed LLW to Disposal, Shipment of HLW and TRU Waste to Interim Storage, and Interim Stabilization of Waste Storage Tanks). Descriptions of the facilities that would be affected and waste management activities that would be undertaken under each alternative are provided. This chapter ends with discussions of alternatives considered but not analyzed and a summary of the potential impacts under each alternative.

2.1 OVERVIEW OF ALTERNATIVES

This EIS addresses the waste management activities that DOE needs to conduct to meet its responsibilities under the West Valley Demonstration Project Act, as discussed in Section 1.1.2. Proposed waste management activities include the onsite management actions of continued temporary storage of waste and interim stabilization of the HLW tanks, and the shipment of wastes for offsite storage or disposal. Three alternatives have been defined for evaluation within this EIS; these alternatives represent the full range of waste management actions available to DOE and have been identified as:

- No Action Alternative – Continuation of Ongoing Waste Management Activities;
- Alternative A (DOE's Preferred Alternative) – Offsite Shipment of HLW, LLW, Mixed LLW, and TRU Waste to Disposal and Ongoing Management of the Waste Storage Tanks; and
- Alternative B – Offsite Shipment of LLW and Mixed LLW to Disposal, Shipment of HLW and TRU to Interim Storage, and Interim Stabilization of the Waste Storage Tanks.

The estimated timeframe for the actions assessed under these alternatives is a period of 10 years. Within that period, with the exception of the shipment of HLW directly from WVDP to a geologic repository (assumed for the purposes of analysis to be the proposed Yucca Mountain Repository near Las Vegas, Nevada), it is anticipated that available funding would allow the complete removal of all existing and any newly generated LLW and TRU wastes. HLW, whether shipped to Yucca Mountain directly from West Valley under Alternative A or from interim offsite storage under Alternative B, is not currently scheduled to be received by the repository until after 2025. The actions proposed under each alternative are summarized in Table 2-1.

Under the **No Action Alternative**, no new waste management activities would be performed beyond those activities that have been evaluated under NEPA in accordance with the provisions of the Council on Environmental Quality implementing regulations for NEPA (40 CFR Parts 1500-1508). DOE would provide continued operational support and monitoring of the facilities to meet the requirements for safety and hazard management. Waste management activities currently in progress would continue for onsite storage of existing Class A, B, and C LLW, mixed LLW, TRU waste and HLW wastes and offsite disposal of a limited quantity of Class A LLW at a facility such as Envirocare (a commercial radioactive waste disposal site in Clive, Utah), DOE's NTS in Mercury, Nevada, or the Hanford site in Richland, Washington. Under the No Action Alternative, active hazard management, operational support,

Table 2-1. Alternatives Matrix

Proposed Action	Alternative		
	No Action	Alt A – Preferred	Alt B
LLW			
Ship LLW to Envirocare, Hanford, or NTS	X(a)	X	X
TRU Waste			
Continue onsite storage	X		
Ship for disposal to WIPP		X	
Ship to Hanford, INEEL, ORNL, SRS, or WIPP for interim storage, then to WIPP for disposal			X
HLW			
Continue storing HLW onsite in Process Building	X		
Ship to Yucca Mtn directly		X	
Ship to SRS or Hanford for interim storage, then ship to Yucca Mtn			X
HLW Tank Management			
Ongoing management	X	X	
Retrievable grout added to dry tank and dry annulus			X

a. Limited to 145,000 cubic feet (4,100 cubic meters) of Class A LLW.

surveillance, and oversight would continue at the current levels of activity. Upon completion of ongoing efforts to remove wastes to the extent that is technically and economically practical, the waste storage tanks and their surrounding vaults would be ventilated to manage moisture levels as a corrosion prevention measure. Waste transportation destinations proposed under the No Action Alternative are shown in Figure 2-1.

Alternative A (DOE's Preferred Alternative) would emphasize waste management actions focused on (1) the removal of currently stored wastes (existing waste) on the site and waste to be generated over the next 10 years and (2) shipment to offsite locations for disposal. Upon completion of waste removal, DOE would continue active operational support, surveillance, and oversight to safely manage remaining systems and hazards. All LLW types (the remaining Class A LLW and all Class B and C LLW) and mixed LLW would be prepared for disposal and shipped off the site. Under Alternative A, DOE would ship Class A, B and C LLW and mixed LLW to one of two DOE potential disposal sites (in Washington or Nevada) or to a commercial disposal site such as the Envirocare facility in Utah, ship TRU waste to WIPP in New Mexico, and ship HLW to the proposed Yucca Mountain HLW Repository. LLW and mixed LLW would be shipped over the next 10 years. TRU waste shipments to WIPP could occur within the next 10 years if the TRU waste is determined to meet all the requirements for disposal in this repository; however, if some or all of WVDP's TRU waste does not meet these requirements, the Department would need to explore other alternatives for disposal of this waste. Waste transportation destinations proposed under Alternative A are shown in Figure 2-2.

Under **Alternative B**, offsite shipment and disposal of existing wastes and newly generated LLW (the remaining Class A LLW and all Class B and C LLW) and mixed LLW would be transported to the same locations assessed under Alternative A. TRU wastes would be shipped to interim storage at one of five DOE sites: Hanford, INEEL, ORNL, SRS, or WIPP, with subsequent shipments from Hanford, INEEL, ORNL, or SRS to WIPP for disposal. HLW would be shipped to SRS or Hanford for interim storage,

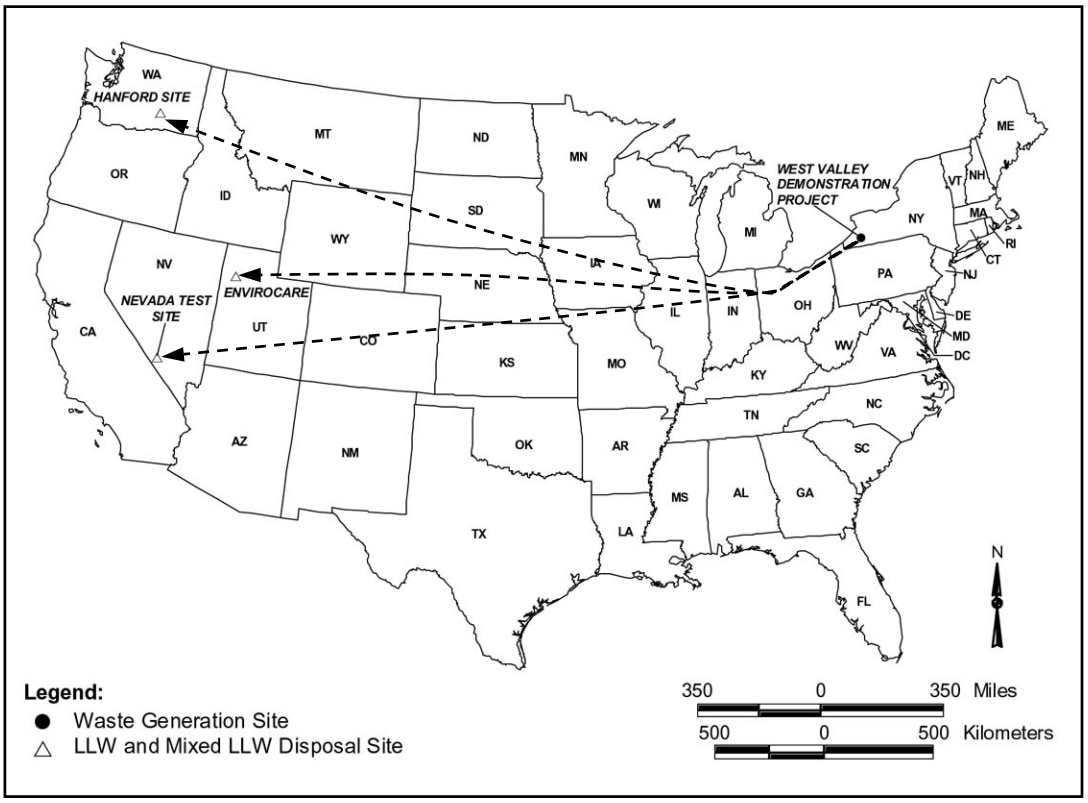

Figure 2-1. Waste Destinations Under the No Action Alternative

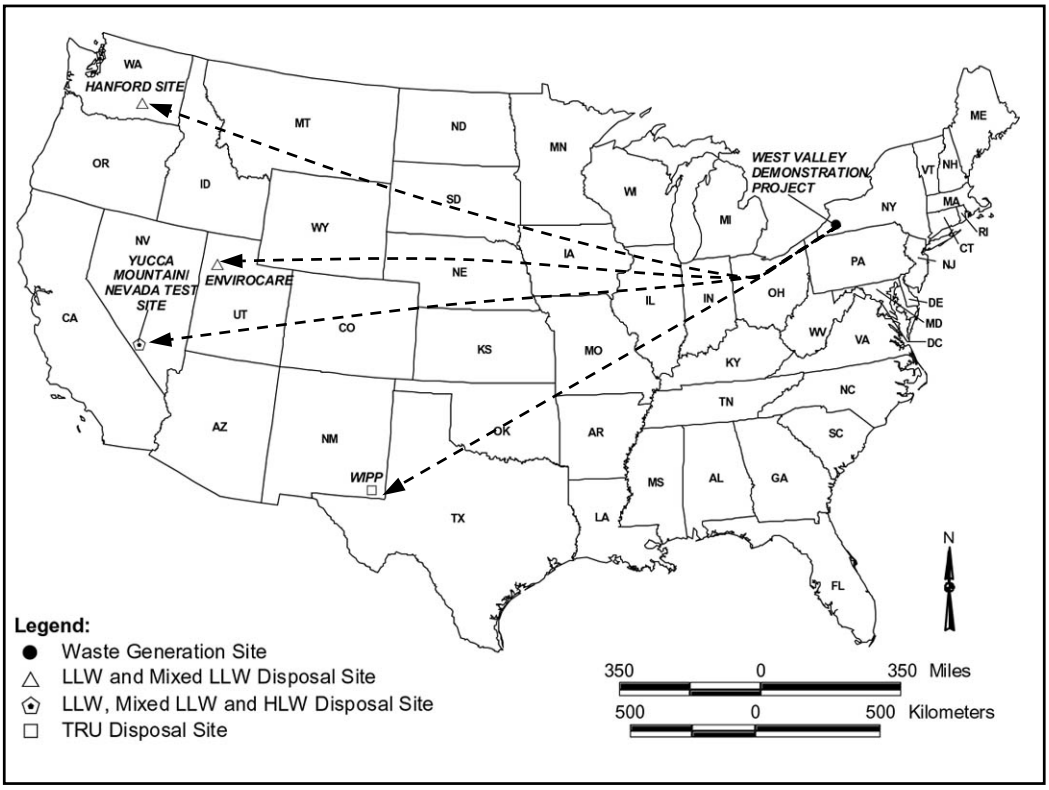

Figure 2-2. Waste Destinations Under Alternative A

with subsequent shipments to Yucca Mountain for disposal. The waste storage tanks and their surrounding vaults would be partially filled with a retrievable grout to provide for interim stabilization of the tanks. Waste transportation destinations proposed under Alternative B are shown in Figure 2-3.

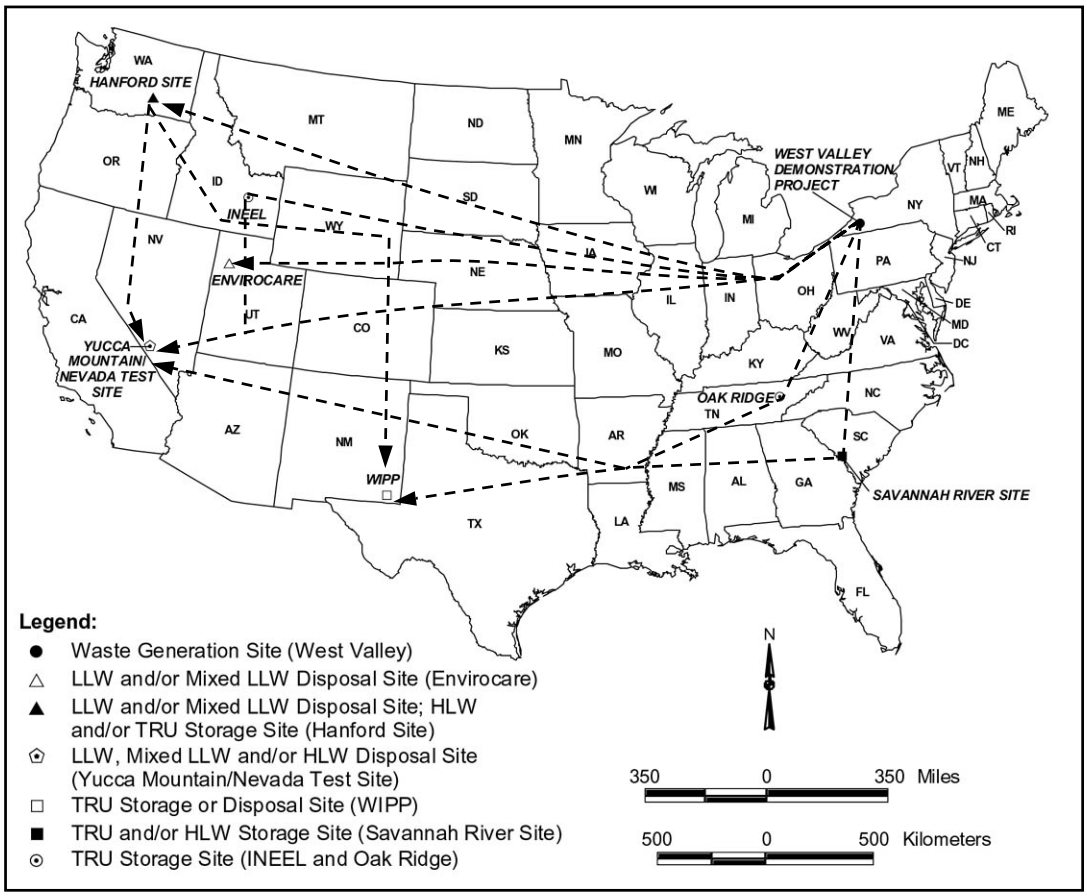

Figure 2-3. Waste Destinations Under Alternative B

2.2 ONSITE WASTE MANAGEMENT FACILITIES

Wastes subject to offsite shipping and disposal under the actions proposed in this EIS are stored in several WVDP buildings. An aerial view of the entire project premises is shown in Figure 2-4, and a schematic of the same view is shown in Figure 2-5. An overview of the site facilities is shown in Figure 1-2.

Vitrified HLW is stored in the Process Building (Figure 2-5). The vitrified HLW was the result of processing liquid wastes that were stored in tanks in the Tank Farm (Figure 2-6). LLW and TRU wastes are stored in the LSB; LSAs 1, 3, and 4; the Chemical Process Cell Waste Storage Area (Figure 2-7); and the Radwaste Treatment System Drum Cell (Figure 2-8). Volume reduction of oversized contaminated materials will occur in the Remote Handled Waste Facility (RHWF) that is currently under construction (Figure 2-7).